

# National Board of Examinations

**Question Paper Name :** DNB Nuclear Medicine Paper2  
**Subject Name :** DNB Nuclear Medicine Paper2  
**Duration :** 182  
**Total Marks :** 100  
**Display Marks:** No

**Maximum Instruction Time :** 0  
**Is Section Default? :** No

**Question Number : 1 Question Id : 32718744690 Consider As Subjective : Yes**

**Please write your answers in the answer booklet within the allotted pages as follows:-**

Question Number	Answer to be attempted within	Question Number	Answer to be attempted within
Q. 1	Page 1-5	Q. 6	Page 26-30
Q. 2	Page 6-10	Q. 7	Page 31-35
Q. 3	Page 11-15	Q. 8	Page 36-40
Q. 4	Page 16-20	Q. 9	Page 41-45
Q. 5	Page 21-25	Q. 10	Page 46-50

1. Enumerate the cyclotron-produced radionuclides and their production. Describe any one in detail along with its potential clinical applications. [6+4]

**Question Number : 2 Question Id : 32718744691 Consider As Subjective : Yes**

Explain the mechanism of uptake and clinical uses of PSMA-based radiopharmaceuticals. Enumerate the different PSMA radioligands employed in nuclear medicine. [6+4]

**Question Number : 3 Question Id : 32718744692 Consider As Subjective : Yes**

Compare the production, properties and clinical use of  $^{68}\text{Ga}$  and  $^{64}\text{Cu}$  radiopharmaceuticals. [5+5]

**Question Number : 4 Question Id : 32718744693 Consider As Subjective : Yes**

- a) Radiopharmaceuticals for PET myocardial perfusion imaging. [5]
- b) RBC labeling techniques, their pros and cons. [5]

**Question Number : 5 Question Id : 32718744694 Consider As Subjective : Yes**

Discuss the principle, production, and uses of therapeutic radionuclides:

- a) Lu-177. [5]
- b) Ac-225. [5]

**Question Number : 6 Question Id : 32718744695 Consider As Subjective : Yes**

- a) I-124. [5]
- b) Zr-89. [5]

**Question Number : 7 Question Id : 32718744696 Consider As Subjective : Yes**

Outline sterility, apyrogenicity and radiochemical purity testing methods in hospital radiopharmacy. [10]

**Question Number : 8 Question Id : 32718744697 Consider As Subjective : Yes**

Describe the generator systems used in nuclear medicine ( $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$  and  $\text{Ge-68}/\text{Ga-68}$ ). [10]

**Question Number : 9 Question Id : 32718744698 Consider As Subjective : Yes**

Discuss the future trends in Theranostic radiopharmaceuticals with examples. [10]

**Question Number : 10 Question Id : 32718744699 Consider As Subjective : Yes**

Describe the radiopharmaceuticals used for myocardial viability. [10]